

11-347419US

**AFTER FINAL: EXPEDITED ACTION**

01750024aa

Amendment dated 07/02/2004

Reply to office action mailed 04/02/2004

The following is a complete listing of all claims in the application, with an indication of the status of each:

**Listing of claims:**

- 1           1. (currently amended) A fingerprint input apparatus, comprising:
  - 2                   a fingerprint sensor for reading a fingerprint and then outputting
  - 3                           fingerprint image data corresponding to said fingerprint, said
  - 4                           fingerprint being made by applying moisture to a finger and
  - 5                           applying pressure to the finger at a position on the sensor;
  - 6                   a fingerprint analyzer for analyzing the quality of a fingerprint image
  - 7                           represented by said fingerprint image data and creating an
  - 8                           evaluation result representing the cause of said quality failure
  - 9                           and/or countermeasure against said cause when said analysis
  - 10                          result indicates a quality failure, said evaluation result
  - 11                          specifying whether said fingerprint is to be retaken with an
  - 12                          increase or decrease in said moisture, an increase or decrease in
  - 13                          said pressure, and a direction of change in said position; and
  - 14                   an evaluation result display for displaying said evaluation result in a
  - 15                          plurality of ways.
  
- 1           2. (original) The fingerprint input apparatus defined in Claim 1, wherein said
  - 2                   fingerprint analyzer comprises:
    - 3                           a quality evaluation and processing means for performing the analysis
    - 4                                   based on the image quality and/or feature points of a fingerprint
    - 5                                   image represented by said fingerprint image data; and
    - 6                           an evaluation result display and processing means for driving said
    - 7                                   evaluation result display based on said evaluation result.

1        3. (original) The fingerprint input apparatus defined in Claim 2, wherein said  
2        fingerprint sensor comprises a light source and an image pickup device.

1        4. (original) The fingerprint image apparatus defined in Claim 2, wherein  
2        said quality evaluation and processing means performs the analysis based on  
3        any one of the density of said fingerprint image, a fingerprint display area  
4        indicated by said fingerprint image, the shape of ridges indicated by said  
5        fingerprint image, and the position of a spiral shape indicated by said  
6        fingerprint image.

1        5. (previously presented) The fingerprint image apparatus defined in Claim 2,  
2        wherein said plurality of ways for evaluation result display is drawn from the  
3        group of light emitting elements for visually displaying said evaluation result,  
4        a display panel for visually displaying said evaluation result, and an acoustic  
5        device for acoustically displaying said evaluation result.

1        6. (previously presented) The fingerprint image apparatus defined in Claim 2,  
2        wherein said plurality of ways for evaluation result display includes a display  
3        panel for visually displaying said evaluation result and light emitting elements  
4        for visually displaying said evaluation result.

1        7. (previously presented) The fingerprint image apparatus defined in Claim 6,  
2        wherein said evaluation result display also includes an acoustic device for  
3        acoustically displaying said evaluation result.

1        8. (original) The fingerprint image apparatus defined in Claim 1, wherein  
2        said fingerprint sensor comprises a light source and an image pickup device.

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1        9. (original) The fingerprint image apparatus defined in Claim 8, wherein  
2        said quality evaluation and processing means performs the analysis based on  
3        any one of the density of said fingerprint image, a fingerprint display area  
4        indicated by said fingerprint image, the shape of ridges indicated by said  
5        fingerprint image, and the position of a spiral shape indicated by said  
6        fingerprint image.

1        10. (previously presented) The fingerprint image apparatus defined in Claim  
2        8, wherein said plurality of ways for evaluation result display is drawn from  
3        the group of light emitting elements for visually displaying said evaluation  
4        result, a display panel for visually displaying said evaluation result, and an  
5        acoustic device for acoustically displaying said evaluation result.

1        11. (previously presented) The fingerprint image apparatus defined in Claim  
2        8, wherein said plurality of ways for evaluation result display includes a  
3        display panel for visually displaying said evaluation result and light emitting  
4        elements for visually displaying said evaluation result.

1        12. (previously presented) The fingerprint image apparatus defined in Claim  
2        11, wherein said evaluation result display also includes an acoustic device for  
3        acoustically displaying said evaluation result.

1        13. (original) The fingerprint image apparatus defined in Claim 1, wherein  
2        said quality evaluation and processing means performs the analysis based on  
3        any one of the density of said fingerprint image, a fingerprint display area  
4        indicated by said fingerprint image, the shape of ridges indicated by said

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5 fingerprint image, and the position of a spiral shape indicated by said  
6 fingerprint image.

1 14. (previously presented) The fingerprint image apparatus defined in Claim  
2 13, wherein said plurality of ways for evaluation result display is drawn from  
3 the group of light emitting elements for visually displaying said evaluation  
4 result, a display panel for visually displaying said evaluation result, and an  
5 acoustic device for acoustically displaying said evaluation result.

1 15. (previously presented) The fingerprint image apparatus defined in Claim  
2 13, wherein said plurality of ways for evaluation result display includes a  
3 display panel for visually displaying said evaluation result and light emitting  
4 elements for visually displaying said evaluation result.

1 16. (previously presented) The fingerprint image apparatus defined in Claim  
2 15, wherein said evaluation result display also includes an acoustic device for  
3 acoustically displaying said evaluation result.

1 17. (previously presented) The fingerprint image apparatus defined in Claim  
2 1, wherein said plurality of ways for evaluation result display is drawn from  
3 the group of light emitting elements for visually displaying said evaluation  
4 result, a display panel for visually displaying said evaluation result, and an  
5 acoustic device for acoustically displaying said evaluation result.

1 18. (previously presented) The fingerprint image apparatus defined in Claim  
2 1, wherein said plurality of ways for evaluation result display includes a  
3 display panel for visually displaying said evaluation result and light emitting  
4 elements for visually displaying said evaluation result.

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1        19. (previously presented) The fingerprint image apparatus defined in Claim  
2        18, wherein said evaluation result display also includes an acoustic device for  
3        acoustically displaying said evaluation result.

1        20. (currently amended) A fingerprint input method comprising the steps of:  
2                reading a fingerprint and then outputting fingerprint image data  
3                        corresponding to said fingerprint, said fingerprint being made  
4                        by applying moisture to a finger and applying pressure to the  
5                        finger at a position on a sensor;  
6                analyzing the quality of a fingerprint image represented by said  
7                        fingerprint image data and creating an evaluation result  
8                        representing the cause of said quality failure and/or a  
9                        countermeasure against said cause when said analysis result  
10                       indicates a quality failure, said evaluation result specifying  
11                       whether said fingerprint is to be retaken with an increase or  
12                       decrease in said moisture, an increase or decrease in said  
13                       pressure, and a direction of change in said position; and  
14        displaying said evaluation result in a plurality of ways.